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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,238	03/09/2005	Hideaki Nishiwaki	2005_0234A	2838

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EXAMINER	
HOANG, TU BA	
ART UNIT	**PAPER NUMBER**
2832	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/527,238	NISHIWAKI ET AL.	
	Examiner	Art Unit	
	Tu Ba Hoang	2832	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10,13-21,24 and 25* is/are rejected.

7)☒ Claim(s) *11,12,22 and 23* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 March 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *03/09/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 7, 15, 17, 18, and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 7, 15, 18, the recitation of "(SiNx) renders the claim indefinite because it is unclear for what "x" standing for.

Claims 17 and 25 provides for the use of the claimed magneto-resistive element of claim 1 or 3, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 17 and 25 is further rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd.* v. *Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

It is also further noted that there is no patentable weight to be given to such intended uses, and inasmuch, there is no patentable weight given to "environment of at least 150°C" as noted in claims 16 and 24.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1, 7-10, 13, and 15-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Onuma et al (US 6,846,582). Onuma et al shows a magneto-resistive element comprising: a ceramic substrate 1; a metal artificial lattice film 6 in which a magnetic thin film or Co layer and a non-magnetic metal thin film or Pd layer are alternately laminated in at least two layers on a part of this substrate (as set forth at column 10, lines 42-54) and formed into a predetermined pattern (i.e., such as rectangular as shown in the drawing); a first protective layer 7 covering the metal artificial lattice film 6 on the substrate; and a second protective layer or lubricant layer 8 formed on the first protective layer 7; wherein residual stress of the first protective layer is substantially zero (column 1, lines 35-37, i.e., to enhance the sliding resistance

and the corrosion resistance; column 5, lines 20-25, i.e., to reduce the magnetostriction to zero; and column 6, line 11, i.e., state of zero external magnetic field), and the second protective layer 8 is made of a material rejecting water such as perfluoropolyether (column 10, line 61), wherein the first protective layer is made of silicon oxide as set forth at column 7, lines 3-7, i.e., meet the recitation of "one of silicon monoxide (SiO), silicon dioxide (SiO.sub.2), silicon nitride (SiNx), and silicon oxynitride (SiON)"), and the second protective layer is made of polyimide (column 7, lines 23-31, i.e., perfluoropolyether-based material is considered the equivalent of polyimide), the magnetic strain of the magnetic thin film is substantially zero (i.e., magnetic anisotropy as described at column 4, lines 35-50 and the magnetic exchange coupling force is reduced to reduce noise as set forth at column 5, lines 12-18), the substrate 1 is a glazed ceramic substrate having a glass glazed thereon (as set forth at column 6, lines 44-52) , and the metal artificial lattice film 6 is formed on the glass layer, the magneto-resistive element can be heated at a temperature of 450°C as noted at column 13, lines51-52 (i.e., can be used in an environment of at least 150°C).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 3-6, 14, 19-21, and 24-25 rejected under 35 U.S.C. 103(a) as being unpatentable over Onuma et al in view of Kitade et al (US 5,930,085). Onuma et al discloses substantially all features of the claimed invention as noted above except for the magnetic thin film contains nickel (Ni), iron (Fe), and cobalt (Co), and in percentage composition based on the number of atoms, nickel (Ni) ranges from 1 to 5 atomic %,

cobalt (Co) ranges from 50 to 95 atomic %, and a residue is iron, or is an alloy film having a composition ratio based on the number of atoms of nickel (Ni):cobalt (Co):iron (Fe)=4:90:6, and the non-magnetic metal thin film is made of one of cupper (Cu) and silver (Ag). The use of a magnetic thin film having the atomic composition percentages as claimed is old and well known, as evidence, Kitade et al discloses the magnetic thin film contains cobalt-nickel-iron alloy where nickel (Ni) ranges from 5 to 40 atomic %, cobalt (Co) ranges from 30 to 95 atomic %, and a residue is iron (noted in the abstract and column 4, lines 34-37, i.e., such ranges are overlapped with the recited ranges), or is an alloy film having a composition ratio based on the number of atoms of nickel (Ni):cobalt (Co):iron (Fe)=4:90:6 (column 6, line 5, i.e., for example, such alloy $Co_{90}Ni_3Fe_7$), and the non-magnetic metal thin film is made of one of cupper (Cu) and silver (Ag) (column 5, line 57). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize or substitute the metal artificial lattice film of Onuma et al with an alloy taught by Kitade et al in order to reduce the coercive force as well as to reduce the magnetostriction to zero (as set forth at column 5, lines 20-21 in Kitade et al) if so desired.

Claims 11-12 and 22-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: none of the prior art of record show the amount of sodium ions (Na^+), potassium ions (K^+), and chlorine ions (Cl^-) contained in the glass layer of the substrate is up to 10 ppm each as recited in each of claims 11-12 and 22-23.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tu Ba Hoang whose telephone number is (571) 272-4780. The examiner can normally be reached on Mon-Thu from 6:00AM to 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad can be reached on (571) 272-1990. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tu Ba Hoang
Primary Examiner
Art Unit 2832

January 25, 2007